

A background image showing a hand holding a clear glass filled with water. The hand is positioned in the center, and the glass is slightly tilted. The background is a soft, out-of-focus blue and white, suggesting a clean, clinical environment.

# ANNUAL WATER QUALITY REPORT

*Water testing performed in 2007*



CITY OF HARRISONBURG  
PUBLIC UTILITIES

PWS ID#: VA2660345

## Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791

## Where Does My Water Come From?

The City of Harrisonburg has two reliable water supply sources. The Dry River in Rawley Springs is a surface water source. The watershed includes the Switzer Reservoir Impoundment, which can supply the piping network at capacity with 4 million gallons per day (except during drought) of highest quality water at the most cost-effective price. The North River in Bridgewater is also a surface water source and provides up to 7.5 million gallons per day and 5.5 million gallons per day during drought. The water quantity and quality of the North River fluctuates due to runoff conditions at the withdrawal site. Because our treatment facility has the capacity to provide 15 million gallons of clean drinking water every day, we are in the process of developing a supply line from the South Fork Shenandoah River. Once this project has been completed, we expect to provide a supply of 15 million gallons per day to our customers.

## Source Water Assessment

A Source Water Assessment for the City of Harrisonburg was completed by the Virginia Department of Health on May 24, 2002. This assessment determined that the city's water sources, North River and Dry River, are surface waters exposed to a wide array of changing hydrologic, hydraulic, and atmospheric conditions. More specific information may be obtained by contacting the Harrisonburg Director of Public Utilities, Michael Collins, at (540) 434-9959.

## Consumers Right-To-Know

We submitted our Source Water Monitoring Plan to the Virginia Department of Health on February 5, 2008; this was 35 days later than the deadline and thereby violated a drinking water standard. There is nothing to do at this time; more information pertaining to Enhanced Surface Water Treatment Rule (LT2) is available at (540) 434-9959 on 2155 Beery Road, Harrisonburg, VA 22801.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Lead and Drinking Water

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. The City of Harrisonburg had only one of thirty samples indicating the presence of lead within a residential home. Lead may be significantly reduced by flushing your tap water thoroughly each morning for approximately 5 minutes. Lead has not been detected within the source water from the City of Harrisonburg Water Treatment Plant. This is not a violation.



## Community Participation

We encourage consumers to report all concerns regarding water quality. It is important that we recognize, investigate, and record each event. This information will be used to guide future operation strategies and capital improvements. Please report your concerns to (540) 434-9959, extension 112.

## Questions?

If you have questions about this report or want additional information about the quality of your drinking water, please contact our Director of Public Utilities, Michael Collins, at (540) 434-9959. You may see updates of this report on our Web site: [www.harrisonburgva.gov](http://www.harrisonburgva.gov).

## Ten Reasons To Drink Water

1. Water is absolutely essential to the human body's survival. A person can live for about a month without food, but only about a week without water.
2. Water helps to maintain healthy body weight by increasing metabolism and regulating appetite.
3. Water leads to increased energy levels. The most common cause of daytime fatigue is actually mild dehydration.
4. Drinking adequate amounts of water can decrease the risk of certain types of cancers, including colon cancer, bladder cancer, and breast cancer.
5. For a majority of sufferers, drinking water can significantly reduce joint and/or back pain.
6. Water leads to overall greater health by flushing our wastes and bacteria that can cause disease.
7. Water can prevent and alleviate headaches.
8. Water naturally moisturizes skin and ensures proper cellular formation underneath layers of skin to give it a healthy, glowing appearance.
9. Water aids in the digestion process and prevents constipation.
10. Water is the primary mode of transportation for all nutrients in the body and is essential for proper circulation.

## Ten Interesting And Useful Water Facts

1. Roughly 70% of an adult's body is made up of water.
2. A healthy person can drink about three gallons (48 cups) of water per day.
3. Drinking too much water too quickly can lead to water intoxication. Water intoxication occurs when water dilutes the sodium level in the bloodstream and causes an imbalance of water in the brain.
4. While the daily recommended amount of water is eight cups per day, not all of this water must be consumed in the liquid form. Nearly every food or drink item provides some water to the body.
5. Soft drinks, coffee, and tea, while made up almost entirely of water, also contain caffeine. Caffeine can act as a mild diuretic, preventing water from traveling to necessary locations in the body.
6. The United States uses about 346,000 million gallons of fresh water every day.
7. The average person in the United States uses anywhere from 80-100 gallons of water per day. Flushing the toilet actually takes up the largest amount of this water.
8. Approximately 85% of U. S. residents receive their water from public water facilities. The remaining 15% supply their own water from private wells or other sources.
9. By the time a person feels thirsty, his or her body has lost over 1% of its total water amount.
10. The weight a person loses directly after intense physical activity is weight from water, not fat.

## Harrisonburg Water and Sewer Expenses and Services Provided

As a City of Harrisonburg customer, you may wonder what you are really paying for when you pay that utility bill every month. In this chart, we have attempted to show you the expenses related to the services provided per 1000 gallons during the 2006-2007 fiscal year.



HARRISONBURG WATER AND SEWER EXPENSES AND SERVICES PROVIDED				
2006-2007 WATER AND SEWER ITEMIZATION OF EXPENSES	WATER FUND		SEWER FUND	
	COST PER 1000 GALS.	SERVICES PROVIDED	COST PER 1000 GALS.	SERVICES PROVIDED
ADMINISTRATION	\$0.12	customer service administrative functions	\$0.33	executive services engineering services
"PUMPS, STORAGE, MONITORING"	\$0.23	water operations water maintenance	\$0.06	sewer operations sewer maintenance
"TRANSMISSION, COLLECTION, DISTRIBUTION"	\$0.31	support programs, repairs to water system, assist road paving, water system reliability, water system accountability, water system quality, equipment & vehicles, buildings and grounds, Miss Utility, assist other departments, new water services, and construction	\$0.51	support programs, repairs to sewer system, assist road paving, sewer system reliability, I&I abatement, equipment & vehicles, buildings and grounds, Miss Utility, assist other departments, new sewer services, and construction
UTILITY BILLING	\$0.10	utility bills and accounting	\$0.14	utility billing field services
MISCELLANEOUS	\$0.94	equivalent taxes depreciation	\$0.85	equivalent taxes depreciation
PURIFICATION OR TREATMENT	\$0.44	water plant operations water plant maintenance	\$1.14	HRRSA operations HRRSA maintenance
TOTAL OPERATING	\$2.14		\$3.03	
CAPITAL	\$0.74	capital outlay and capital replacements capital additions	\$0.58	capital outlay and capital replacements capital additions
TOTAL DEBT SERVICE	\$0.35	raw water project debt storage tank debt	\$0.69	HRRSA debt
TOTAL TRANSFERS	\$0.33	support general fund	\$0.32	support general fund
TOTAL WATER FUND	\$3.56		\$4.62	

UTILITY PROVIDER	EQUIVALENT RESIDENTIAL CONNECTIONS	WATER \$/5000 GAL	SEWER \$/5000 GAL	W & S RATE \$/5000 GAL
City of Harrisonburg	25,923	12.08	17.40	29.48
Virginia Control Group	N/A	21.59	25.32	46.91

*Courtesy of Draper Aden Associates 2007 study*



## Sampling Results

We are pleased to report that during the past year, the water delivered to your home or business complied with, or did better than, all state and federal drinking water requirements. For your information, we have compiled the table below to show what substances were detected in our drinking water during 2007. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES<sup>1</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Fluoride</b> (ppm)	2007	4	4	1.02	0.77–1.22	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAA]</b> (ppb)	2007	60	NA	27.9	5–38	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2007	10	10	1.02	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2007	80	NA	39.1	13–50	No	By-product of drinking water chlorination
<b>Total Coliform Bacteria</b> (% positive samples)	2007	5% of monthly samples are positive	0	2	NA	No	Naturally present in the environment
<b>Total Organic Carbon</b> (removal ratio)	2007	TT	NA	1.0	NA	No	Naturally present in the environment
<b>Turbidity<sup>2</sup></b> (NTU)	2007	TT	NA	0.30	0.03–0.30	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2007	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected from 31 sample sites throughout the community (Lead was not detected at the 90th percentile)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2007	1.3	1.3	0.039	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

<sup>1</sup>Variances and Exemptions (State or U.S. EPA permission not to meet an MCL or a treatment technique under certain conditions): On May 29, 2007, the Virginia Department of Health issued the City of Harrisonburg a waiver for the sampling of Diquat until December 31, 2010.

<sup>2</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

## Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just

noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**removal ratio:** A ratio between the percentage of a substances actually removed to the percentage of the substance required to be removed.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.